2007 KNOWLEDGE WORKER QUOTIENT ™: The Top Metros in the Knowledge Economy

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Our 5th annual Knowledge Worker Quotient provides you with a roadmap for where to find the best educated work force in America.

In today's global economy, when a company is exploring possibilities for a future facility location, it is likely to have a list that includes not only U.S. cities, but also cities throughout the world.

Where that company will choose to locate often hinges on labor and on which factor is more important: low costs or high skills.

As a general rule, if that future facility is to be labor-intensive, it will usually end up in a low-cost location, possibly even India, China or Eastern Europe. In these cases where the labor component will constitute the bulk of the operating costs, the worker skill requirements are usually not very high. These also tend to be low-margin operations.

If, on the other hand, it is to be a capital-intensive operation, it usually means that the skill sets requirements for the work force will be dramatically higher. While the labor component may still make up the majority of the overall costs, these tend to be higher margin operations and it is the worker's brains, not brawn, that is the deciding factor.

"Universities are the main attraction that bring technology businesses into a particular area."

— Charles Brez, Vice President of Innovation Alliances, NineSigma

Most of the annual studies *Expansion Management* publishes revolve primarily around cost factors, and for obvious reasons. Our 5th annual Knowledge Worker QuotientTM, on the other hand, focuses on the college-educated work force — scientists, engineers, medical doctors, Ph.D.s and others with graduate and postgraduate degrees — that provides the foundation for our knowledge sector economy.

Top 10 Knowledge Worker Metros

1. Ann Arbor, Mich. MSA
2. Washington-Arlington-Alexandria, D.C.-Md.-Va.-W.Va. MSA
3. San Francisco-Oakland-Fremont, Calif. MSA
4. Boston-Cambridge-Quincy, Mass.-N.H. MSA
5. Durham, N.C. MSA (tie)
San Jose-Sunnyvale-Santa Clara, Calif. MSA (tie)
7. Boulder, Colo. MSA
8. Madison, Wis. MSA
9. Iowa City, Iowa MSA
10. Ithaca, N.Y. MSA (tie)
Seattle-Tacoma-Bellevue, Wash. MSA (tie)

These are the communities that will thrive and prosper in the future, and there is one common thread that runs throughout all of them: the presence of one or more major research universities.

"Universities are the main attraction that bring technology businesses into a particular area," says Charles Brez, vice president of innovation alliances at NineSigma, a Cleveland, Ohio,-based company that enhances the R&D capabilities of businesses like P&G, DuPont, and Kraft, by connecting those companies with the best researchers worldwide through an open network of innovators. "Look at Silicon Valley with Stanford, or Route 128 with MIT in Cambridge, Mass. To me, there's no better draw for bringing businesses into an area than technology and research spending in a university."

In a survey conducted by the Kauffman Foundation of 1,700 patent-holding scientists at U.S. universities who receive the top 20 percent of National Cancer Institute grants, more than one-fourth had started their own businesses.

"R&D spending by universities has been associated with important multiplier effects," says Rita Gunther McGrath, a professor at the Columbia University Business School and co-author of The Entrepreneurial Mindset (2000, Harvard Business School Press) and MarketBusters: 40 Strategic Moves that Drive Exceptional Business Growth. "Big-spending schools can attract top professors and grants, which in turn attracts top graduate students. These produce better qualified R&D students and indeed, teams of people, some of whom start businesses or share their knowledge and insight with business owners in the area."

University Research parks in the U.S. and Canada directly employ more than 350,000

Top Metros for College-Educated Workers

1. Boulder, Colo. MSA
2. Bloomington-Normal, Ill.
3. Raleigh-Cary, N.C. MSA
4. Columbia, Mo. MSA
5. Fort Collins-Loveland, Colo.

people and contribute more than $31 billion annually to the economies of the United States and Canada, according to new data compiled by the Association of University Research Parks and published in March 2007.

A community does not have to have a world-renowned university in order to provide highly educated workers.

"While the elite schools do produce benefits, for corporations what is sometimes important is the good solid students who come out of middle tier schools, and even community colleges to staff their ranks," said McGrath. "Diversity and a deep talent pool are good things for growth."

What Makes for a Sold Knowledge Worker Base?

Our annual Knowledge Worker Quotient TM ranks each of the 362 metropolitan statistical areas (MSA) in terms of their ability to provide the depth of talent and innovative environment upon which knowledge-driven technologies thrive.

Top Metros for Scientists & Engineers

1. Kennewick-Richland-Pasco, Wash. MSA
2. Pascagoula, Miss. MSA
3. Fond du Lac, Wis. MSA
4. Huntsville, Ala. MSA
5. Boulder, Colo. MSA
6. San Jose-Sunnyvale-Santa Clara, Calif. MSA
7. Olympia, Wash. MSA
8. Palm Bay-Melbourne-Titusville, Fla. MSA
9. Midland, Texas MSA
10. Durham, N.C. MSA

MSA
6. Ames, Iowa MSA
7. San Francisco-Oakland-Fremont, Calif. MSA
8. Austin-Round Rock, Texas MSA
9. Corvallis, Ore. MSA
10. Ann Arbor, Mich. MSA

One of the standard features of Expansion Management's various annual metro "Quotient" studies is the awarding of the **"5-Star Knowledge Worker Metro"** designation to the top 20 percent of the 362 MSAs. Metros that earn this distinction can rightfully consider themselves to be among the elite cities when it comes to that particular category.

Metros that rank in the 21 to 40 percentile are designated as **"4-Star Knowledge Worker Metros,"** while those that rank in the middle (41 to 60 percentile) are designated as "3-Star," and so on.

The best way to get a quick feel for the relative intellectual strength of a community is to look at its people, its higher education facilities and the amount of R&D money flowing into the university. Bearing that in mind, we focused on the following broad categories:

Adult Education Levels Among College Graduates. We believe the education level of the adult population is by far the most important asset a community offers.

In this category, we ranked each MSA according to the percentage of adults with at least a bachelor's degree, the percentage with at least a master's degree, the percentage with a Ph.D., and the percentage of adults possessing professional degrees.

This information is available through a variety of sources, including the Bureau of Labor Statistics' Occupational Employment Statistics, U.S. Census Bureau and County Business Patterns.

Scientists and Engineers. We also compared the percentage of the work force engaged in science and engineering jobs. These individuals, with their hard skills, are the backbone of the technology sector of the economy.

We are now in an era where these transportation-driven factors are beginning to give way to a less tangible, but equally real, community asset: highly-educated workers.

Medical Doctors. In addition to their primary role as health care providers, doctors also play an extremely important role in the development of the life sciences sector of our economy. Doctors are not only users of this new technology, they are often intimately involved in its development and delivery to market. Our primary source was the Occupational Employment Statistics.

Colleges and Universities. Having a major university or, even better, having a variety of colleges and universities, is a major asset to a community. If you look at all of the great technology centers that have sprouted around the country since the end of World War II, every one of them (i.e., Silicon Valley, Research Triangle, Austin, Boston's Route 128, etc.) has been built around world class universities.

Universities not only provide a steady flow of educated workers, their faculty members are also a major resource for knowledge-based companies. They also represent a major source of entrepreneurial talent.

R&D Spending Among Universities. The cornerstone of the knowledge economy rests in an aggressive research and development program. A good measurement for relative R&D activity at a university is to look at how much money is flowing into the university for R&D. This information is readily

available from the National Science Foundation.

By going to the NSF Web site, www.nsf.gov, you can also determine, by academic discipline, how the R&D money is divided within a particular university. This enables you to better focus in on activity in your company's particular field of interest.

What Does This Mean?

Cities and nations live or die because of their relative advantage over other communities. In the past, it almost always revolved around a natural geographic feature, such as a deep water port or being situated at the confluence of two major rivers. Later, cities rose or fell depending upon whether or not a man-made transportation infrastructure, like the railroad or the interstate highway, passed through them

We are now in an era where these transportation-driven factors are beginning to give way to a less tangible, but equally real, community asset: highly-educated workers. Communities that have them will see their economies thrive and prosper, while those that don't will find themselves falling farther behind.

Click here to read Commentary: Is it the Degree, or the Ability to Think, That's Most Important?.

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Top Metros for University R&D Spending

1. San Francisco-Oakland-Fremont, Calif. MSA
2. New York-Newark-Edison, N.Y.-N.J.-Pa. MSA
3. Baltimore-Towson, Md. MSA
4. Boston-Cambridge-Quincy, Mass.-N.H. MSA
5. Houston-Baytown-Sugar Land, Texas MSA
6. Chicago-Naperville-Joliet, Ill.-Ind.-Wis. MSA
7. Durham, N.C. MSA
8. Philadelphia-Camden-Wilmington, Pa.-N.J.-Del.-Md. MSA
9. Atlanta-Sandy Springs-Marietta, Ga. MSA
10. Washington-Arlington-Alexandria, D.C.-Md.-Va.-W.Va. MSA

SOURCE: National Science Foundation